

On page 30, please change line 5 to "ester are provided, by carbonylation of a".

REMARKS

The specification was objected to due to several typographical errors. The Applicants appreciate the Examiner bringing these to Applicants' attention and appropriate corrections have been made.

Claims 1 – 13 were rejected under 35 USC §103(a) as being unpatentable over Sielkin, US Patent 5,679,831 (US'831) in view of Drent, EP 0495548-A2 (EP'548). This rejection is respectfully traversed. As noted by the Examiner, the instant application is distinguished from US'831 in that US'831 does not teach the simple hydrocarbon linked bidentate ligand of the instant application. This difference is important. As shown in Comparative Example C of the instant application, if the conditions and the ligand of US'831 are applied to the carbonylation of pentenenitrile, no catalyst activity is observed. Therefore, it would not be obvious to one skilled in the art to use the simple hydrocarbon link of the instant invention. The Examiner also notes that EP'548 teaches the use of 1,3-(di-tert-butyl phosphino)-propane for use in the carbonylation of olefins and points out Example XIII describing the carbonylation of cyano-ethene, resulting in the branched product 2-cyano methyl propionate. The process of the instant invention, however, results in a linear product. Specifically, the instant invention is directed toward the carbonylation of pentenenitrile to prepare 5-cyanovaleric acid or its ester, a linear product. Applicants respectfully submit that one skilled in the art would not have expected that if the process of the invention were to be carried out on the larger pentene-nitrile, that such high linearity's as shown in the Examples would be obtained. The Examiner asserts that the invention would be obvious due to the "motivation" to "employ a less complex expensive catalyst in the process of Sielkin to improve the overall profitability of the process for the synthesis

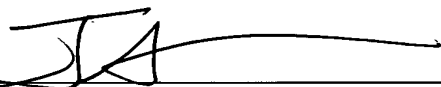
of ϵ -caprolactam". However, such a "motivation" does not render an invention obvious without a teaching or suggestion for the claims in the prior art. In fact, commercial importance is a strong indicia of nonobviousness. In general, the secondary indicia of *nonobviousness* include such factors as cost savings, commercial importance, a long-felt need in the art, failures of others after numerous attempts and industry adoption and licensing. In view of the above arguments, Applicants respectfully request that the obviousness rejection of Claims 1-13 be withdrawn.

Claims 14-23 were rejected under 35 USC §103(a) as being unpatentable over Sielkin, US Patent 5,679,831 (US'831) in view of Drent, EP 0495548-A2 (EP'548) and further in view of Di Cosmio, US Patent 6,077,955 ('955). This rejection is respectfully traversed in view of the arguments as presented in item 2 above.

In view of the above amendments and arguments, Applicants respectfully request that this application now be allowed.

Respectfully submitted,

EIT DRENT AND WILLEM WABE JAGER

By 

Attorney, Jennifer D. Adamson
Registration No. 47,379
(713) 241-3901

P. O. Box 2463
Houston, Texas 77252-2463

MARKED UP VERSION OF SPECIFICATION

On page 9, line 24: “substituents offering steric [stearic] hindrance to a bidentate”.

On page 9, please change line 26 to: “group R should be free of substituents offering steric [stearic]”.

On page 30, please change line 5 to “ester are [is] provided, by carbonylation of a”.